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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,232	09/26/2003	Joon-Young Park	P56904	6815

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EXAMINER	
RIELLEY, ELIZABETH A	

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 12/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/670,232	PARK ET AL.	
	Examiner	Art Unit	
	Elizabeth A. Rielley	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Amendment filed 9/28/2005 has been entered and considered by the Examiner. Claims 16-20 have been added. Currently, claims 1-20 are pending in the instant application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 9-11, and 13-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Humbs et al (US 6774392).

In regard to claim 1, Humbs et al ('392) disclose an organic light emitting diode (abstract; figures 3a and 3b), comprising: a substrate (1; column 4 line 22 to column 5 line 35) having a first electrode layer formed thereon (2); an insulator layer formed on the substrate (3) and forming a channel in a

predetermined pattern (40); an organic polymer layer formed based on the channel (6) and having at least an emission layer (column 5 lines 9-11); a barrier (8) formed at either side of the insulator layer (4) for preventing ink for the organic polymer layer from running out from both ends of the channel; and a second electrode layer (10; figure 4b) formed on the organic polymer layer.

In regard to claim 2, Humbs et al ('392) teach the barrier (8)extends lengthwise in a direction perpendicular to the channel (40; see figure 3b).

In regard to claim 3, Humbs et al ('392) teach the barrier (8) extends lengthwise in a direction inclined with respect to the channel (see figure 3a).

In regard to claim 4, Humbs et al ('392) teach the barrier (8) is spaced by a predetermined distance from a lateral surface of a neighboring insulator layer (4; see figure 3a).

In regard to claim 5, Humbs et al ('392) teach the barrier (8) extends to a lateral surface of a neighboring insulator layer (3; see figure 3b).

In regard to claim 9, Humbs et al ('392) teach a height of the barrier is no less than 50 nm and no greater than the height of the insulator layer (column 5 lines 14-17; column 4 line 54-59).

In regard to claim 10, Humbs et al ('392) teach at least one blocking member (8) for interrupting outflow of the organic polymer layer and provided substantially at a center of two ends of each channel (see figure 3a).

In regard to claim 11, Humbs et al ('392) teach a shape of one of the blocking member (8) is one of a cuboid, a cylinder, a pyramid, a wedge and a V-shape (see figure 3a).

In regard to claim 13, Humbs et al ('392) teach the width of at least one of the blocking members (W) is no greater than a width of the channel (a; see figure 3a).

In regard to claim 14, Humbs et al ('392) teach a height of the barrier is no less than 50 nm and no greater than the height of the insulator layer (column 5 lines 14-17; column 4 line 54-59).

In regard to claim 15, Humbs et al ('392) teach the polymer organic layer is formed by coating a liquid polymer organic material along the channel by inkjet printing (column 1 lines 28-30).

In regard to claim 16, Humbs et al ('392) teach the barrier (8) is formed on the insulator layer (3; see figure 3b) and extends outwardly from at least one of two sides of the insulator layer (see figure 3a).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6-8, 12, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Humbs et al (US 6774392) in view of Tatsufumi (JP 2001-230073).

In regard to claim 6, Humbs et al ('392) teach all the limitations set forth as described above, including the limitations wherein the barrier comprises: at least one first barrier (8) for preventing the polymer ink from running out of the channel. Humbs et al ('392) is silent regarding the limitations of a second barrier for preventing the polymer ink from running in from neighboring channels. Tatsufumi et al ('073) teach a barrier for preventing the polymer ink from running in from neighboring channels (15; figure 3; abstract) in order to increase the reliability of the display. Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the display of Humbs et al ('392) with the barriers of Tatsufumi et al ('073). Motivation to combine is to increase the reliability of the display.

In regard to claim 7, Humbs et al ('392) teach all the limitations set forth as described above except the first and second barriers incline lengthwise with respect to the channel, the first and second

barriers extending in opposite directions. Tatsufumi et al ('073) teach the first and second barriers incline lengthwise with respect to the channel, the first and second barriers extending in opposite directions (see figures 23-28) in order to increase the reliability of the display. Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the display of Humbs et al ('392) with the barriers of Tatsufumi et al ('073). Motivation to combine is to increase the reliability of the display.

In regard to claims 8 and 19, Humbs et al ('392) teach all the limitations set forth as described above except the first barrier extends lengthwise toward a center of the channel, and the second barrier extends outward from the channel. Tatsufumi et al ('073) teach the first barrier extends lengthwise toward a center of the channel, and the second barrier extends outward from the channel (see figures 24 to 28) in order to increase the reliability of the display. Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the display of Humbs et al ('392) with the barriers of Tatsufumi et al ('073). Motivation to combine is to increase the reliability of the display.

In regard to claim 12, Humbs et al ('392) teach all the limitations set forth, as described above, except at least one of the blocking members includes at least two elements in a wedge shape, centers of the wedge being opposite to each other. Tatsufumi et al ('073) teach one of the blocking members (15; figure 3) wherein the blocking member includes at least two elements in a wedge shape (abstract; the barrier rib edge portions being the wedge[1] shape), centers of the wedge being opposite to each other (see figure 3; abstract; paragraphs 9-11) in order to improve the reliably of the display (abstract). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the OLED of Humbs et al ('392) with the barrier members of Tatsufumi et al ('073). Motivation to combine

would be to improve the reliably of the display.

In regard to claim 17, Humbs et al ('392) disclose an organic light emitting diode (abstract; figures 3a and 3b), comprising: a substrate (1; column 4 line 22 to column 5 line 35) having a first electrode layer formed thereon (2); an insulator layer formed on the substrate (3) and forming a channel in a predetermined pattern (40); an organic polymer layer formed based on the channel (6) and having at least an emission layer (column 5 lines 9-11); a barrier (8) formed on the insulating layer (3; see figure 3b); and a second electrode layer (10; figure 4b) formed on the organic polymer layer. Humbs et al ('392) are silent regarding the limitation of a second barrier. Tatsufumi et al ('073) teach a second barrier (15; abstract paragraphs 9-11) in order to increase the reliability of the display (abstract). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the OLED of Humbs et al ('392) with the barrier members of Tatsufumi et al ('073). Motivation to combine would be to improve the reliably of the display.

In regard to claim 18, Tatsufumi et al ('073) teach the first and second barriers extend lengthwise with respect to the channel and extending in opposite directions (see figure 3). Motivation to combine would be to improve the reliably of the display.

In regard to claim 20, Humbs et al ('392) disclose an organic light emitting diode (abstract; figures 3a and 3b), comprising: a substrate (1; column 4 line 22 to column 5 line 35) having a first electrode layer formed thereon (2); an insulator layer formed on the substrate (3) and forming a channel in

[1] http://www.sitelighting.com/Products.cfm?Brand=gar&ProLine=Scon&Style=101 a square can be a wedge shape.

a predetermined pattern (40); an organic polymer layer formed based on the channel (6) and having at least an emission layer (column 5 lines 9-11); a barrier (8) formed on the insulating layer (3; see figure 3b); and a second electrode layer (10; figure 4b) formed on the organic polymer layer. Humbs et al ('392) are silent regarding the limitation of at least one blocking member, wherein the at least one blocking member includes at least two elements in a wedge shape, the centers of the wedge shape being opposite to each other. Tatsufumi et al ('073) teach a blocking member (15; abstract paragraphs 9-11) wherein the blocking member includes at least two elements in a wedge shape (abstract; the barrier rib edge portions being the wedge[2] shape), centers of the wedge being opposite to each other (see figure 3; abstract; paragraphs 9-11) in order to improve the reliably of the display (abstract). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the OLED of Humbs et al ('392) with the barrier members of Tatsufumi et al ('073). Motivation to combine would be to improve the reliably of the display.

Response to Arguments

Applicant's arguments filed 9/28/05 have been fully considered but they are not persuasive.

In regard to Applicant's argument that Humbs et al ('392) is not valid prior art under 35 USC § 103 (c), the Examiner agrees. However, Humbs et al ('392) is being rejected under 35 USC § 102 (e) and 35 USC § 103 (a) and not 35 USC § 103 (c).

In regard to Applicant's argument that the channel 40 is formed by second insulator layer 4, the Examiner acknowledges that the second insulator layer 4 helps to create the channel 40, however figure

[2] http://www.sitelighting.com/Products.cfm?Brand=gar&ProLine=Scon&Style=101 a square can be a wedge shape.

3b shows that the channel is made as an inverted "T" with both the first and second insulator layers 3 and 4.

In regard to Applicant's argument that Humbs et al ('392) fails to meet the requirements of dependent claim 16, the Examiner respectfully disagrees. Claim 16 states, "the barrier is formed on the insulator layer and extends outwardly from at least one of two sides of the insulator layer". Figure 3b shows that the barrier (8) is formed on the insulator layer (3) and extends outwardly from at least one of the two sides of the insulator layer (3).

In regard to Applicant's argument that Humbs et al ('392) fails to provide the adequate motivation for their invention, the Examiner notes that motivation is not necessary for a 102(e) rejection.

The Examiner notes that Applicant's argument on page 16, the very last paragraph states "Independent claim 16", however claim 16 is not independent. For the purpose of this examination, the Examiner will understand this as "Independent claim 17".

In regard to Applicant's argument that Humbs et al ('392) does not mention or suggest a solution to the problem of ink flowing out of the channel, the Examiner notes that proof of motivation to combine two or more pieces of prior art is placed on the reference that proposes the modification, and in this case it is Tatsufumi et al ('073) burden not Humbs et al ('392). MPEP 706.02(j).

In regard to Applicant's argument that Tatsufumi et al ('073) fails to disclose a second barrier, the Examiner respectfully disagrees. Tatsufumi et al ('073) teach a second barrier (15; abstract paragraphs 9-11) in order to increase the reliability of the display (abstract). The fact that both Tatsufumi and Humbs

teach different methods of manufacturing the OLED is irrelevant, since the patentability of the claim resides on the final product and not the process by which is manufactured.

In response to applicant's argument that the prior art of record fails to disclose that the barriers and blocking members to block the flow of ink, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Rielley whose telephone number is 571-272-2117. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elizabeth Rielley

Examiner
Art Unit 2879

12/7/05
MARICELI SANTIAGO
PRIMARY EXAMINER